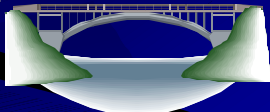


Future Vision of Transportation

2020 or 20/20

Jim Schultz, MDOT
August 4, 2003

Transportation Infrastructure



Research

Data

Vehicles

■ Yesterday

■ Today

■ Tomorrow

Vehicles - Yesterday

■ Convenience

- Crank Windows
- Manual Locks
- Open Windows
- Bench seats

■ Energy

- Gas Guzzlers
- Gas & Diesel Powered

■ Environment

- Pollution Control ?

■ Entertainment

- AM Radio
- After-market : 8 Track & Cassette

Vehicles Today

■ Convenience

- Power Windows and Door Locks
- Remote Entry
- Climate Control

■ Energy

- More MPG
- Gas & Diesel with some Hybrid and Electric

■ Environment

- Catalytic Converters
- Recycled Parts

■ Entertainment

- AM/FM Radio with some XM
- Media Centers : Cassette, CD/DVD

■ Safety

- Seat Belts & Air Bags
- ABS Brake Systems
- Stability Control
- Traction Control

Vehicles Tomorrow

■ Fuel Cell Vehicles

- Impact on gas tax revenues?

■ Drive by Wire

- Skateboard Designs
- Electronic vs. Mechanical

■ Features

- OnStar on Steroids?
- Adaptive Cruise Control
- Collision Avoidance Systems
- Roadway Departure Systems
- Audible Alarms (rumble strips)

Infrastructure - Now

- Search for long lasting, and maintenance-free pavement and bridges
- Better Designs to Increase Motorist Safety
 - Emphasis on reducing fatalities and crashes
- Travel Demand Management
 - Transportation – Land Use
 - Rideshare Initiatives: Car Pool Lots
 - Multi-modal: encourage transit, bike, walking
- Funding vs. Needs

Infrastructure - Future

- “Can’t build our way out of congestion”
- Operations Initiatives
 - AASHTO Committee Formed
 - Signal Summit
 - Vehicle Infrastructure Integration
- Travel Demand Management
 - HOV / Lexus Lanes
 - Incident Management
 - Courtesy Patrol
 - Freeway Towing: Tow Desk Re-engineering
 - Ramp Metering
- Funding / Pricing
 - Gas tax on Alternative fuels
 - Tolls / Usage fees based on facility type/time of day

Societal Changes

- Aging Population Issues
 - Drivers license age limit ?
 - Accessibility issues for:
 - Retirees in a suburban development
 - Health care access
 - Increased role for transit?
- Development Patterns Impact
 - Current:
 - More and Longer Trips
 - Increasing auto ownership (16 year olds for high school)
 - New ?:
 - New-Urbanism / mixed use impacts
 - Increasing emphasis on a multi-modal transportation solution
 - Congestion : anti-sprawl debates

Traffic Signal Summit

■ Subcommittees:

- Signal Retiming
- Contract Streamlining
- Red Light Running
- Short Term / Hardware-Software
- Long Term / Strategy and Vision
- Data

Traffic Signal Summit Short Term Subcommittee

■ Goal: How to reduce fatalities and crashes x% within next 5 years?

■ Some Issues being addressed:

- Developing a concept for the typical hardware installations in place within 5 years / cost?
- Compliance with national standards (MUTCD)
- Guidelines:
 - Pedestrian Signals
 - Countdown
 - Macomb County Road Commission: installations along Metro Parkway
 - Audible
 - City of Rochester : Main Street
 - Transit Signal Priority Systems
 - Requires AVL, Electronic Schedule databases
 - Updated Signal Controllers / Sensors

Countdown Pedestrian Signal: Grand Rapids



Traffic Signal Summit Long Term Subcommittee

- **Develop a strategy for retiming signals on an ongoing basis.**
- **Interoperability of signals across multiple jurisdictions**
- **Traffic Management Centers**
 - Both for freeways and arterial (signal) management
 - Disaster Recovery Centers for each other
 - Metro Center will operate 24/7 while signal operations operate M-F, 9-5.
 - Metro Center has ability to enact pre-set signal timing plans to react to both planned and unplanned events

Vehicle Infrastructure Integration (VII)

- Ad-hoc Coalition of FHWA, AASHTO and Alliance of Auto Manufacturers
- Development of 11 Use Cases
 - DOT operations
 - Weather- engagement strategy
 - Pavement management
 - Origin destination pair
 - Traffic congestion
 - Vehicle operations
 - Diagnostic downloads
 - Map updates
 - Driver value
 - Real Time traffic information
 - Media downloads
 - Safety
 - Intersection- engagement strategy
 - safety event recorder (black box)
 - precision map development

